No. 668,494. Patented Feb. 19, 1901.

W. H. CRIST.

TOOL HEAD.

(Application filed Aug. 31, 1900.)

(No Model.)

Fig. 1.

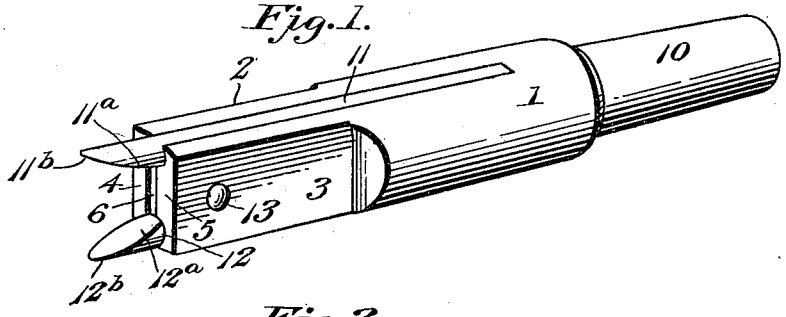


Fig. 2.

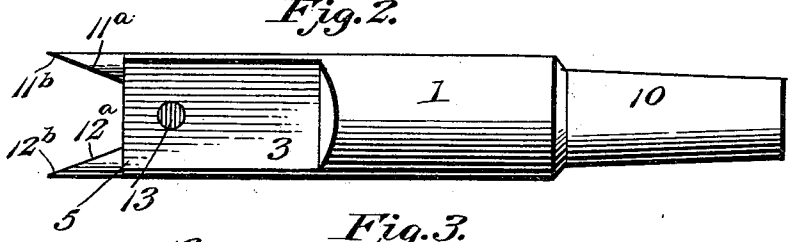


Fig. 3.

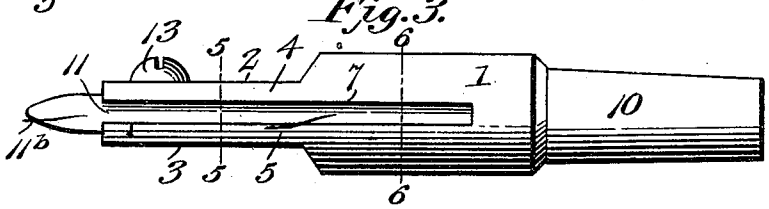


Fig. 4.

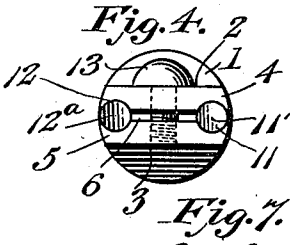


Fig. 5.

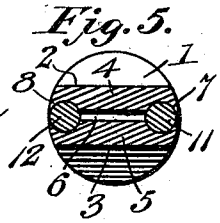


Fig. 6.

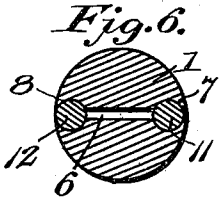


Fig. 7.

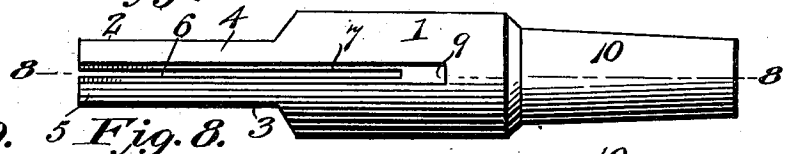


Fig. 9.

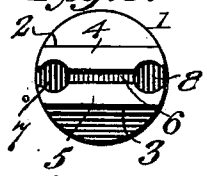


Fig. 8.

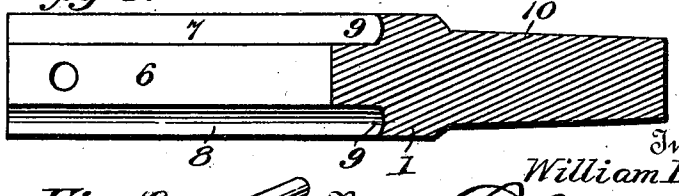
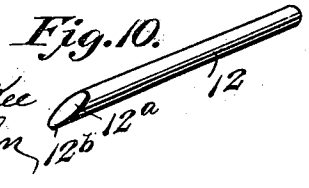


Fig. 10.



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By
E. G. Siggers
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UNITED STATES PATENT OFFICE.

WILLIAM H. CRIST, OF WILLIAMSPORT, PENNSYLVANIA.

TOOL-HEAD.

SPECIFICATION forming part of Letters Patent No. 668,494, dated February 19, 1901.

Application filed August 31, 1900. Serial No. 28,693. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CRIST, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Tool-Head, of which the following is a specification.

This invention relates to a novel cutter-head for mortising-machines, one object of the invention being to produce an efficient cutter for forming pulley-mortises in window-casings or other circular recesses in various other connections.

A further object of the invention is to provide a head of novel construction with adjustable and removable bits, having their cutting edges or tips located in the plane of the outer surface or periphery of the head and having opposed beveled faces, which produce, in conjunction with the outer surfaces of the bits, the cutting ends or tips referred to.

A further object of the invention is to construct the head or holder in a manner to afford rigid seats for the bits and to permit the adjustable and detachable retention thereof by a single retaining member or screw, which may be loosened to simultaneously release the several bits constituting elements of the tool.

To the accomplishment of the several objects stated and others which will hereinafter appear, the invention consists in the construction and arrangement of parts to be described, illustrated in the accompanying drawings, and defined in the appended claims.

In said drawings, Figure 1 is a perspective view of the mortising-head complete. Fig. 2 is a side elevation thereof. Fig. 3 is an edge view. Fig. 4 is an end view. Fig. 5 is a transverse section on the line 5 5 of Fig. 3. Fig. 6 is a similar view on the line 6 6 of Fig. 3. Fig. 7 is an edge view with the bits removed. Fig. 8 is a central longitudinal section on the line 8 8 of Fig. 7. Fig. 9 is an end view with the bits removed, and Fig. 10 is a detail view of one of the bits.

Referring to the numerals of reference employed to designate corresponding parts in the several views, 1 indicates the body of the holder or head, which is of cylindrical form and is cut away at opposite sides of one end to define a pair of parallel flat side faces 2 and 3. These faces constitute the outer sides of a pair of opposed clamping-plates 4 and 5, produced by the formation of a diametrical slot or kerf 6, extending from the outer end of the body to the point adjacent to its opposite end and intermediate of and parallel with the faces 2 and 3. The provision of this diametrical open-ended slot or kerf serves to bifurcate the body 1 and to define the clamping-plates 4 and 5, which constitute comparatively thin and more or less yielding extensions of the cylindrical body.

At the opposite sides of the head are formed a pair of bit-sockets 7 and 8 of nearly circular cross-sectional contour, each of said sockets being formed partially in each of the bifurcations of the head at opposite sides of the kerf 6 and extended somewhat below the lower end of the kerf to form seats 9 for the reception of the lower ends of the bits in the solid portion of the head—that is to say, the bit-sockets 7 and 8 are defined primarily by opposed grooves or depressions in the faces of the bifurcations of the head and the extensions or plates thereof, but are extended longitudinally in order that their lower ends may be located in the solid portion of the head—so that absolutely rigid seats calculated to withstand the end thrust of the bits are provided.

From the end of the body 1, opposite the clamping-plates 4 and 5, extends a reduced shank 10, designed to facilitate the attachment of the head to the mortising-machine. This then is the body or holder complete, and, as shown in the drawings, it is formed from a single piece of tool-steel. This holder is designed for the reception of a pair of mortising-bits 11 and 12, which are of cylindrical form and are formed at their projecting ends with opposed bevel-faces 11^a and 12^a, which, in conjunction with the exterior surfaces thereof, produce cutting-tips 11^b and 12^b, located, respectively, in the planes of the extreme outer sides of the bits.

I have stated that the bit-sockets 7 and 8 are nearly circular in cross-section, and by reference to the drawings the utility of this particular form of socket will be apparent, since it enables me when the bits are inserted in the holder to bring the outer surfaces of said elements in the same plane—that is to say, the periphery of each bit will at one

point be flush with the periphery of the holder—and as the cutting-tip of the bit is located at its periphery it will be seen that the cutting-tips of the several bits will lie in the plane of the periphery of the holder, but at a sufficient distance beyond the end thereof to permit the cutting of a mortise which will give sufficient clearance for the holder. The bits are firmly secured in place by a bit-retaining screw 13, piercing the plates 4 and 5 transversely intermediate of the sockets 7 and 8 and designed when screwed up to cause said plates to firmly grip the bits to effect their secure retention. Obviously, however, the bits may be easily adjusted or advanced when necessary or entirely removed from the holder for sharpening or replacement.

From the foregoing it will be observed that I have produced a novel cutter-head for mortising-machines, embodying separable and adjustable bits retained by bifurcations of the head and rigidly seated in bit-seats located beyond the bifurcations of the head and designed to resist the end thrust of the bits, also that I have produced a head of this character having removable bits the cutting edges of which are disposed in the plane of the periphery of the head; but while the present embodiment of the invention appears at this time to be preferable I wish to reserve the right to effect such structural variations as may be suggested by experience and experiment so long as they are comprehended within the scope of the protection prayed.

What I claim is—

1. A cutter-head for mortising-machines comprising a bifurcated body, and a pair of removable bits clamped between the bifurcations and having terminal cutting edges located in the plane of the periphery of the body.

2. A cutter-head comprising a body having a reduced bifurcated end and longitudinal bit-sockets of more than semicircular contour formed in part in each of the bifurcations of the body, cylindrical bits located within the bit-sockets, each of said bits having a portion of its outer face flush with the periphery of the body and provided with a terminal cutting edge located in the plane of said periphery, and means for drawing the bifurcations of the body together to securely clamp the bits.

3. A cutter-head for mortising-machines bifurcated at one end and having flat bit-clamping plates constituting extensions of said bifurcations, bit-sockets located at diametrically opposite sides of the head and formed in part in the opposed faces of the clamping-plates, said bit-sockets being extended into the solid portion of the head beyond the bifurcated end thereof to form seats, cylindrical bits retained within the bit-sockets and having their ends located in the seats, the opposite ends of said bits beyond the plates, having opposed beveled faces serving to define terminal cutting edges located in the plane of the periphery of the body, and a retaining-screw piercing the plates transversely between the bit-sockets and designed to draw said plates against the bits.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM H. CRIST.

Witnesses:

C. B. LAMISON,

C. S. CALEHOOF.